Patent

SYSTEM AND METHOD FOR STORING AND DISTRIBUTING TELEVISION VIEWING PATTERNS FROM A CLEARINGHOUSE

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CROSS-REFERENCE TO RELATED APPLICATIONS

[0002]   This application relates to Attorney Docket No. 36968-265386 (BS01341), filed by Matz et al. on December 14, 2001, entitled "System and Method for Utilizing Television Viewing Patterns," which is incorporated herein by reference. This application also relates to Attorney Docket No. 36968-265387 (BS01342) filed by Matz et al. on December 14, 2001, entitled "System and Method for Identifying Desirable Subscribers," which is incorporated herein by reference. This application also relates to U.S. Application Serial No. 09/496825, filed February 1, 2000, which is incorporated herein by reference.

FIELD OF THE INVENTION

[0003]   The present invention generally relates to the storage and distribution of television viewing patterns in a clearinghouse and, in particular, to the collection,

storage, and utilization of television viewing patterns received from cable system operators in different locations.

BACKGROUND

[0004]   Television programming providers, such as television networks and cable television companies, derive income from various sources. One source of revenue for the programming providers is advertising revenue. If a television program cannot produce at least as much revenue as it costs to produce the program, the provider will generally cancel the program.

[0005]   Conventionally, advertising revenue equals a rate per thousand viewers multiplied by the number of viewers estimated to be watching a program. Therefore, the higher the number of viewers, the greater the revenue programming providers derive from a program.

[0006]   If a program is popular, i.e., many viewers are watching it, a programming provider charges a higher advertising rate for advertising appearing during the program's commercial breaks than the programming provider is able to charge for less popular programming. Therefore, programming providers are very interested in determining the popularity of a program.

[0007]   In addition, a program scheduled adjacent to a popular program or between two popular programs may attain a higher level of popularity than it might achieve without such opportune scheduling. Therefore, programming providers are interested

in determining the interrelationships between various combinations of programming

as well as between various combinations of programming and advertising.

[0008]   Programming providers conventionally utilize various methods to evaluate

a program's popularity and to evaluate the interrelationships between the program and

5   other programming or advertising. For example, a programming provider may

implement a program of voluntary logging of television viewing by a viewer,

followed by transmission and human processing to analyze the information contained

in the log. In addition, a programming provider may utilize telephone, mail, or other

types of surveys to inquire from random or selected viewers about the viewers'

10   viewing habits and request their recollections regarding their viewing patterns. A

programming provider may also utilize automated monitoring systems that attempt to

intercept television channel choices and changes, record these events, and provide the

recording to a clearinghouse or other facility for further processing.

[0009]   The provider may enlist a ratings company to perform the monitoring and

15   processing. For example, Nielsen Media Research (Nielsen Media Research, Inc.,

New York, New York.), Arbitron (Arbitron Inc., New York, New York.), and

MeasureCast (MeasureCast, Inc., Portland, Oregon.) provide third-party monitoring

and processing capability.

[0010]   The Nielsen Media Research (Nielsen) Ratings are perhaps the best known

20   of the various third-party ratings services. Nielsen utilizes a variety of conventional

sampling methods to determine the number of viewers watching a particular show.

For example, in five thousand homes, Nielsen installs a People Meter. The People

Meter records viewing patterns from television sets, cable television set-top boxes,

videocassette recorders, satellite television set-top boxes, and other sources of video

programming. The People Meter records what content the particular device is

5   providing on an ongoing basis and periodically transmits this information to servers

within a Nielsen facility. Nielsen combines the data uploaded from the People Meter

with media content data to determine what programming and advertising a device

displayed. Nielsen uses the combined data to provide a rating for each program and

advertisement. In conjunction with the People Meter, Nielsen also utilizes viewer

10   diaries and surveys to gather information from a broader spectrum of television

viewers and to confirm the results generated by the People Meter.

[0011]   Arbitron Inc. (Arbitron) is well known for providing radio broadcast

ratings. Arbitron compiles ratings by utilizing surveys. Arbitron also provides

television ratings based on various sampling techniques. In cooperation with Nielsen,

15   Arbitron has developed a Portable People Meter to measure television ratings. The

Portable People Meter is a pager-sized device, worn by a participant in a survey. The

Portable People Meter records viewing by recording sounds encoded into each

broadcast, which identify the program or advertisement. The survey participant

periodically plugs the Portable People Meter into a recharger, which also includes a

20   communicator that uploads the data in the Portable People Meter into a remote

Arbitron server. The Portable People Meter may be a more accurate method of

television ratings than a set-top box, such as the set-top box used by Nielsen. The

Portable People Meter offers the advantage of capturing viewing outside of the home

and of recognizing when the viewer is not within audible range of a television, and

therefore, less likely to be viewing a particular program or advertisement.

[0012]   As the use of the Internet increases, the distribution of programming via

5   Internet channels becomes more important. MeasureCast, Inc. (MeasureCast)

provides a ratings system for Internet media streaming. MeasureCast records the

number of streams requested from a streaming server and provides reports to

programming providers and advertisers detailing the popularity of particular streams.

As is the case in traditional broadcast media, the more popular the stream, the higher

10   the advertising rate a broadcaster is able to charge.

[0013]   Nielsen, Arbitron, and MeasureCast provide direct methods of measuring

the popularity of a program. Various indirect methods are also used to determine the

popularity of programming and the effectiveness of advertising. For example,

advertising effectiveness is often measured in terms of viewer attitudes and

15   subsequent viewer actions, such as purchases, inquiries, behavior changes, and other

actions. Methods of obtaining these indirect measures include: focus group tests,

post-advertising surveys questioning whether an advertisement was viewed,

remembered and possible impact, and measures of product purchases or other indirect

results that may indicate whether or not an advertising campaign has been successful.

20   [0014]   Conventional methods to determine television viewer patterns and

preferences are inefficient and not well suited to immediate, timely use for any

content-customization applications. In addition, conventional systems, such as the

Nielsen and Arbitron meters rely on small samples, which may not be representative

of the target market for a particular advertiser.

[0015]   Also, surveys are expensive and highly dependent on identifying

5   individuals that may have been viewing television at the time of the advertisement.

And post advertising results measurements suffer from questions of causality and

external influences. Focus groups allow reasonably efficient low-volume viewer

analysis, but statistical analysis requires an adequate number of participants and

tightly controlled tests, a combination that may be difficult to achieve.

10   [0016]   Conventional systems and methods do not provide simple, effective, and

efficient means for determining genre-choice preferences in terms of programming or

advertising. The systems also lack simple and efficient methods of determining the

duration of viewing patterns, especially as those patterns are affected by the genre-

type of a program or advertisement, the time-of-day of a broadcast, and the

15   programming and/or advertising preceding and/or succeeding the program.

[0017]   It would be desirable to provide simple, effective, and efficient means for

combining viewing patterns and viewer preferences from a plurality of media

operators (e.g., cable system operators) in various locations to be made available to

requesting parties (e.g., advertisers and media content providers) for various purposes.

20   It would also be desirable to provide selected viewing patterns and viewer preferences

from a plurality of media operators in various locations to be made available to

requesting parties for various purposes.

SUMMARY

[0018]   The present invention provides systems and methods for effectively and

5   efficiently receiving, analyzing, and distributing content-choice information for

subscribers of television and/or other media services. Content-choice information

includes, for example, information relating to the actual viewing activities of

subscribers, subscriber viewing preference information, and subscriber viewing

pattern information. For example, content-choice information may include

10   information as specific as the fact that a subscriber watched a situation comedy on a

particular network from 8:00 p.m. to 8:30 p.m., but switched to a college basketball

game on a cable sports network when the situation comedy went to commercials.

Another example of content-choice information would relate to viewer pattern

information, such as the fact that particular viewer watched a particular television

15   channel at the same time on the same day every week.

[0019]   An embodiment of a system for receiving and distributing content-choice

information comprises a content-choice information clearinghouse. The

clearinghouse receives subscriber content-choice data and provides selected

subscriber content-choice data to a requesting party. The clearinghouse may receive

20   the subscriber content-choice data from a plurality of subscriber content-choice

databases. For example, each cable system operator that provides data to the

7

clearinghouse may have its own subscriber content-choice database at its head-end

facility.

[0020]   In one embodiment, the clearinghouse comprises a database and a

processor. The database stores and sorts the subscriber content-choice data. The

5   processor receives a request for selected subscriber content-choice data from a

requesting party. Examples of requesting parties include, for example, television

content providers, advertisers, and marketing firms. The processor retrieves and

compiles the selected subscriber content-choice data from the database and provides it

to the requesting party over the Internet.

10   [0021]   Subscriber content-choice data may include data relating to the subscriber

(e.g., the viewer or user), data relating to the subscriber system (e.g., the cable or

satellite system operator), data relating to the programming viewed by the subscriber

(e.g., the television programs), data relating to the advertising viewed by the

subscriber, data relating to the viewing preferences of the subscriber, and data relating

15   to the viewing patterns of the subscriber. Specifically, the subscriber content-choice

data may include, for example, subscriber names, subscriber identification

numbers/codes, subscriber geographic locations, subscriber demographic information

(age, sex, race, religion, income, occupation, etc.), subscriber system names (e.g.,

cable system names), subscriber system locations, subscriber system identification

20   numbers/codes, date identifiers, time identifiers, television program data (e.g.,

program name, genre, network/cable/premium program, etc.), advertisement data

(manufacturer, brand, commercial length), radio program data, and Internet program

8

data. The subscriber content-choice data may be in the form of subscriber content-choice records.

[0022] Subscriber content-choice data may also include subscriber content-choice summary data, such as data relating to the viewing preferences of the subscriber, data relating to the viewing preferences of a plurality of subscribers, data relating to the viewing patterns of the subscriber, and data relating to the viewing patterns of a plurality of subscribers. A classification or category system may be established such that subscribers are assigned classifications or categories based on their past viewing histories. The classification system may include primary classifications and sub-classifications. For example, a subscriber who watches sports programming during 40% of his viewing time may have a primary classification of "Sports." If the subscriber watches situation comedies during another 25% of his viewing time, his first sub-classification may be "Situation Comedy." These classifications or subscriber categories are additional examples of subscriber content-choice summary data. When subscriber content-choice data is received from a plurality of subscriber content-choice databases, a standardized classification system is preferably used.

[0023] In another embodiment, a system of the present invention for receiving and distributing content-choice information comprises a content-choice information clearinghouse and a plurality of subscriber content-choice databases. The clearinghouse collects subscriber content-choice data from the plurality of subscriber content-choice databases and stores the subscriber content-choice data. The clearinghouse may comprise a clearinghouse database and a clearinghouse processor.

[0024]   In a further embodiment, the system also comprises a content provider

terminal. For example, a content provider, such as a television content provider or an

advertiser, may request certain subscriber content-choice data from the clearinghouse.

The content provider may submit its request to the clearinghouse over the Internet

5   using the content provider terminal. The clearinghouse processor may then provide

the selected subscriber content-choice data to the content provider terminal over the

Internet after retrieving and compiling the selected subscriber content-choice data

from the clearinghouse database.

[0025]   The present invention also relates to methods for receiving and distributing

10   subscriber content-choice information. An embodiment of a method for receiving

subscriber content-choice information comprises collecting subscriber content-choice

data from a plurality of subscriber content-choice databases, and storing the

subscriber content-choice data in a clearinghouse database. In a further embodiment,

the clearinghouse database may sort the collected subscriber content-choice data.

15   [0026]   An embodiment of the present invention provides numerous advantages

over conventional systems for using subscriber content-choice information in

evaluating programming and advertising content. It is difficult and inefficient in

conventional systems to determine television viewer category or genre preferences,

e.g., sports, shopping, and/or other broad advertisement categories, in particular

20   markets or regions. Also, the category or genre preference may be further sub-

categorized, e.g., college basketball, home theater, or other more detailed category,

creating greater inefficiency in determining viewer preferences. The clearinghouse

provided in an embodiment of the present invention is useful for subscriber content-choice reporting, automated targeting of advertising, promotions, etc. based upon viewer category or genre-choice preferences.

[0027]   It is difficult and inefficient in conventional systems to determine the specific time-of-day viewing patterns of subscribers, including, for example, statistically significant trends for limited time viewing before weekday commutes, limited time viewing during meal hours, etc. In an embodiment of the present invention, information associated with the time of day during which customers view television will be valuable for certain day part analysis used by networks to determine high-value (e.g. high-probability of impression) timeframes within programs for various marketing, advertising and other purposes.

[0028]   It is difficult and inefficient in conventional systems to determine the viewing patterns of behaviors associated with viewer choices regarding programs prior to or following a program in question. For example, the tendency of customers to terminate sports programming which follows or precedes news programming may be valuable information for a program provider. Also, information associated with the probability of continued viewing of programming content following a specific category or genre of programming is valuable for certain day part analysis used by networks to determine high-value, e.g., high-probability of impression, timeframes within programs for various marketing, advertising and other purposes.

[0029]   It is difficult and inefficient in conventional systems to determine the viewing patterns of behaviors associated with viewer choices regarding the broad advertisement content categories occurring in groups of programming which a viewer observes. For example, it is difficult to determine the tendency of subscribers who watch sequences of consecutive programming to terminate non-sports programming when non-sports programming intervenes within a grouping of sports viewing. In an embodiment of the present invention, reports provide information for advertisers as well as program providers. For example, sorted data of successful advertising impressions for all subscribers in any number of locations or regions may be combined to present a highly accurate analysis of the success of advertising impressions based upon the categories or genres or time-of-day in which the advertising was shown.

[0030]   It is difficult and inefficient in conventional systems to determine whether advertising viewers continue to view an entire advertisement or "channel hop" to other programming. For example, whether subscribers view luxury car advertisements throughout the full duration of a thirty-second spot and/or whether subscribers immediately terminate the soft drink advertising spots.

[0031]   It is difficult and inefficient in conventional systems to determine whether advertising viewers have a higher or lower probability of viewing or terminating advertisements based upon the content of the directly preceding or following programs. It is also difficult and inefficient in conventional systems to determine whether advertising viewers have a higher or lower probability of viewing or

terminating advertisements based upon the consistency and content of genres of

programming presented in a multiple program sequence over a specified time interval

preceding or subsequent to the advertisement. In an embodiment of the present

invention, various standardized and customized reports provide data to address these

5   issues.

[0032]   It is also difficult and inefficient in conventional systems to determine the

relative strengths of competitive advertising. In an embodiment of the present

invention, specific analysis may be performed to compare advertising effectiveness

against competitive advertising campaigns.

10   [0033]   The present invention also advantageously provides for the combining of

viewer preferences and viewer patterns from various systems to provide additional

value to content providers, advertisers, networks, cable television networks and other

interested parties. For example, advertisers can focus on data from an entire market

rather than just data from particular cable system.

15   [0034]   The methods and systems of the present invention also advantageously

provide for the simple aggregation of data associated with individual subscribers.

The present invention may also be advantageously implemented for both domestic

and international applications.

[0035]   The methods and systems of the present invention advantageously increase

20   the efficiency relating to the storage and use of data associated with individual

subscribers. For example, by using a clearinghouse, cable system operators need not

store the data long term or provide access to it after the data are collected by the

clearinghouse.

[0036]   Further details and advantages of the present invention are set forth below.

Additional uses, objects, advantages, and novel features of the invention are set forth

5   in the detailed description that follows and will become more apparent to those skilled

in the art upon examination of the following or by practice of the invention.

BRIEF DESCRIPTION OF THE FIGURES

[0037]   FIG. 1 is a schematic of an embodiment of the present invention for

10   collecting content-choice information;

FIG. 2 illustrates the contents of an extensible markup language (XML)

file containing subscriber content-choice data that may be collected by a

clearinghouse in one embodiment of the present invention;

FIG. 3 is a schematic of an embodiment of the present invention for

15   providing content-choice information to a content provider; and

FIG. 4 is a schematic of an embodiment of the present invention for

collecting content-choice information at a clearinghouse and providing content-choice

information to content providers.

DETAILED DESCRIPTION

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[0038]   Embodiments of the present invention provide systems and methods for

effectively and efficiently collecting, storing, combining, categorizing, analyzing, and

14

providing subscriber content-choice information, such as television viewing patterns.

In an embodiment of the present invention, subscriber content-choice data are

collected from a plurality of system operators (e.g., cable system operators), each

having a subscriber content-choice database. The subscriber content-choice data are

5   stored in a clearinghouse. The clearinghouse is able to provide the data, summaries of

the data, and/or analyses of the data to a requesting party, such as a content provider

or an advertiser. The requesting party can request specific data, such as data for a

particular market or region, and the clearinghouse can retrieve the selected data and

provide it to the requesting party. A clearinghouse of the present invention may be

10   local (e.g., where multiple system operators are in a particular market), regional,

national, or international.

[0039]   The systems and methods of the present invention may be advantageously

implemented with the systems and methods disclosed in a patent application filed by

Matz et al. on December 14, 2001, entitled "System and Method for Utilizing

15   Television Viewing Patterns," (Attorney Docket No. 36968-265386 (BS01341))

which is incorporated herein by reference. Under embodiments disclosed therein, a

subscriber's television viewing patterns are combined with programming and

advertising media-content detail to determine the subscriber's content choices.

[0040]   Referring now to the Figures, FIG. 1 is a schematic of an embodiment of

20   the present invention for receiving subscriber content-choice information. In the

embodiment shown, a clearinghouse 5 includes a clearinghouse processor 25, which

is in communication with a clearinghouse database 30. The clearinghouse processor

25 is in communication with the Internet 35, and may collect data from the Internet

and send data to the Internet.

[0041] Also, a cable operator head-end facility 10 includes a subscriber content-

choice processor 20, which is in communication with a subscriber content-choice

5   database 15 in the embodiment shown. The subscriber content-choice database 15

stores subscriber content-choice data received from the cable operator's subscribers.

The subscriber content-choice processor is in communication with the Internet.

While the databases and processors are shown separately at the clearinghouse 5 and at

the cable operator head-end facility, the database and processor at each location may

10   be software executing on a single piece of equipment.

[0042] The clearinghouse 5 collects subscriber content-choice data from the cable

operator head-end facility 10. The subscriber content-choice data are stored in the

subscriber content-choice database 15 based on data received from the cable

operator's subscribers. The subscriber content-choice database 15 is in

15   communication with the processor 20 to assist in the transfer of the subscriber

content-choice data. The clearinghouse processor 25 assists in collecting the

subscriber content-choice data, and the data are stored in the clearinghouse database

30.

[0043] In the embodiment shown, the data are transferred over the Internet 35. In

20   other embodiments, the data may be transferred, for example, over the public

switched telephone network (PSTN).

[0044]   The subscriber content-choice data may be stored in any number of ways and may include data relating to the subscriber (e.g., the viewer or user), data relating to the subscriber system (e.g., the cable or satellite system operator), data relating to the programming viewed by the subscriber (e.g., the television programs), data

5   relating to the advertising viewed by the subscriber, data relating to the viewing preferences of the subscriber, and data relating to the viewing patterns of the subscriber. Specifically, the subscriber content-choice data may include, for example, subscriber names, subscriber identification numbers/codes, subscriber geographic locations, subscriber demographic information (age, sex, race, religion, income,

10   occupation, etc.), subscriber system names (e.g., cable or satellite system names), subscriber system locations, subscriber system identification numbers/codes, date identifiers, time identifiers, television program data (e.g., program name, genre, network/cable/premium program, etc.), advertisement data (manufacturer, brand, commercial length), radio program data, and Internet program data. The subscriber

15   content-choice data may be in the form of subscriber content-choice records.

[0045]   Subscriber content-choice data may also include subscriber content-choice summary data, such as data relating to the viewing preferences of the subscriber, data relating to the viewing preferences of a plurality of subscribers, data relating to the viewing patterns of the subscriber, and data relating to the viewing patterns of a

20   plurality of subscribers.

[0046]   A classification or category system may be established such that subscribers are assigned classifications or categories based on their past viewing

histories. The classification system may include primary classifications and sub-

classifications. These classifications or subscriber categories are additional examples

of subscriber content-choice summary data.

[0047]   In one embodiment, the clearinghouse 5 provides specified formats for the

5   data to be transferred from the cable operator head-end facility 10. For example, the

clearinghouse may specify that the data be transferred as an extensible markup

language (XML) file. FIG. 2 illustrates an example of an XML file containing

subscriber content-choice data.

[0048]   The XML file shown in FIG. 2 includes data relating to the subscriber

10   (Subscriber_Detail), data relating to the subscriber system (Prog_Provider_Detail),

data relating to the programming viewed by the subscriber (Viewing_Detail), and data

relating to the viewing preferences of the subscriber (Subscriber_Class). The data

relating to the subscriber include the subscriber's name (Subscriber_Name), the

subscriber's identification code (Subscriber_ID), and demographic information

15   relating to the subscriber (Subscriber_Demo). The data relating to subscriber system

include the service provider type (Provider_Type) and provider name

(Provider_Name).

[0049]   The file summarizes the programming viewed by the subscriber on one

day. The subscriber watched three television programs and each is summarized. The

20   following data are provided for each program viewed: date viewed (Date), time

viewed (Time_Period), program name (Program_Name), category (Category), and

sub-category (Sub-Category). The categorical data for each program shown are preferably standardized, such that each television program is assigned the same category and sub-category.

[0050]   The data relating to the viewing preferences of the subscriber

5   (Subscriber_Class) include a primary classification (Prim_Class) and two sub-classifications (Sub_Class_1 and Sub_Class_2). A classification system is also preferably standardized such that, for example, classifications are consistently assigned to subscribers across different cable systems. This standardization of the classification system (and of the category system for television programs) provides

10   another manner in which subscriber content-choice data may be aggregated, stored, and provided to requesting parties. The subscriber shown in FIG. 2 is primarily classified as a "Sports" viewer. In an example of a standardized classification system, this classification may indicate, for example, that the subscriber watches sports programming during 40% of his viewing time. The sub-classifications of "Comedy"

15   and "Drama" may indicate that the subscriber watches situation comedies and dramas during another 10% of his viewing time.

[0051]   FIG. 3 is a schematic of an embodiment of the present invention for providing content-choice information to a content provider. The embodiment shown includes a clearinghouse 50 and a content provider 65, both of which are in

20   communication with the Internet 75. In the embodiment shown, the clearinghouse 50 includes a clearinghouse processor 60, which is in communication with a clearinghouse database 55. The clearinghouse processor 60 is in communication with

the Internet 75, and sends and receives data from the Internet 75. The content provider 65 includes a terminal 70. Examples of content providers include the major television networks, cable television networks, advertisers, product manufacturers, service providers, and advertising agencies.

5   [0052]   In the embodiment shown, subscriber content-choice data have been received by the clearinghouse 50 from a plurality of cable operators and stored in the clearinghouse database 55. The content-choice data may be transferred from the clearinghouse 50 to the content provider 65.

[0053]   The content provider 65 uses the terminal 70 to request certain subscriber 10   content-choice data from the clearinghouse 50. The content provider 65 may request the data for a number of reasons and in a number of ways. For example, if a sports drink manufacturer is interested in advertising its products in the northeastern United States, the manufacturer may be interested in the location of the largest number of subscribers that are classified as "Sports" viewers. In this example, the subscriber 15   content-choice data may be selected based on subscriber geographic location detail and based on subscriber classification.

[0054]   As another example, a diaper manufacturer may be interested in determining on what day of the week soap operas receive the highest number of viewers in a particular market. In this example, the subscriber content-choice data 20   may be selected based on date, based on geographic location, and based on program category.

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[0055]   In some embodiments, the clearinghouse 50 may provide a software

program to each of the content providers which use its service that allows the content

providers to submit requests for subscriber content-choice data using a standardized

electronic request form. Using a standardized electronic request form enhances the

5   electronic integration between the clearinghouse 50 and the content providers.

[0056]   The clearinghouse 50 is able to sort and compile the subscriber content-

choice data in its database 55 and provide it to the content provider 65 in a desirable

format using its processor 60. The clearinghouse processor 60 receives the request

for subscriber content-choice data and may query the clearinghouse database 55 to

10   produce the selected content-choice data. The processor 60 may then compile and

assemble the selected content-choice data before providing it to the content provider

65.

[0057]   In other embodiments, the processor 60 may also analyze or summarize the

selected content-choice data to provide content-choice data summaries to the content

15   provider 65. For example, the content provider 65 may want to know the number of

viewers in Raleigh, North Carolina that are classified as "Sports" viewers. The

clearinghouse processor 60 receives this request and formulates an appropriate query

for the database 55.

[0058]   As shown in FIG. 3, the selected subscriber content-choice data may be

20   provided to the content provider 65 over the Internet. In other embodiments, the

selected data may be transferred using the public switched telephone network

21

(PSTN), using a dedicated phone line, and using wireless. The data are preferably

securely provided to the content provider 65 using security techniques (e.g.,

encryption) known to those of ordinary skill in the art. The selected data may be

displayed on the content provider terminal 70. Examples of terminals include, for

5   example, personal computers, laptop computers, personal digital assistants, cellular

telephones, and wireless communication devices. The selected data may be displayed

on the terminal 70 using software (e.g., a browser) running on any of these devices

and a communication channel. For example, the browser may submit a hypertext

transfer protocol ("http") request to a uniform resource locator ("URL").

10   [0059]   While the embodiment shown in FIG. 3 illustrates that the provision of

subscriber content-choice data to content providers may be handled electronically, in

other embodiments, a content provider may request the data by contacting an operator

or by submitting the request in writing. The clearinghouse may print a hard copy of

the selected subscriber content-choice data for transmittal to the content provider.

15   [0060]   An embodiment of the present invention provides great value to content

providers. As a result, content providers are willing to pay for the outputs derived

from the various reports and analysis. The content providers may be billed a flat

subscription-type rate for access to all information received or they may pay for each

report and/or analysis that they request.

20   [0061]   FIG. 4 is a schematic of an embodiment of the present invention for

collecting content-choice information at a clearinghouse 100 and providing content-

choice information to content providers 115,120. The clearinghouse 100 includes a

clearinghouse processor 170, which is in communication with a clearinghouse

database 175 in the embodiment shown. The content providers shown in FIG. 4 are a

cable television network 115 and an advertiser 120. Each content provider 115,120

5   includes a processor 150,160, which is in communication with a terminal 145,155. In

other embodiments, the terminal is in communication with the Internet and a

processor is not necessary.

[0062]   In the embodiment shown, the clearinghouse 100 collects subscriber

content-choice data from a plurality of cable operator head-end facilities 105,110.

10   Each head-end facility 105,110 comprises a subscriber content-choice database

125,135 and a subscriber content-choice processor 130,140. The subscriber content-

choice databases receive and store subscriber content-choice data from the cable

operators' subscribers. The clearinghouse 100 may collect the subscriber content-

choice data from the cable operators 105,110 in a number of ways. For example, the

15   cable operator may transfer the data at specified times. In other embodiments, the

clearinghouse may periodically send requests for the data, which are then transferred

to the clearinghouse from the cable operators.

[0063]   The clearinghouse 100 may specify that the subscriber content-choice data

be delivered in a particular form or format. In this embodiment, the content-choice

20   processors 130,140 may compile, assemble, summarize, and/or analyze the subscriber

content-choice data in the databases 125, 135 prior to delivering the data to the

clearinghouse 100. For example, the clearinghouse 100 may require that only certain

23

data are transferred and that the data are transferred in XML files. In the embodiment

shown, the subscriber content-choice data are transferred to the clearinghouse 100

over the Internet. The data are preferably securely transferred to the clearinghouse

100 using security techniques (e.g., encryption) known to those of ordinary skill in the

5   art.

[0064]   The subscriber content-choice data are received by a clearinghouse

processor 170. In various embodiments, the clearinghouse processor may convert the

subscriber content-choice data to a different format, sort the data, compile the data,

summarize the data, and/or analyze the data. The subscriber content-choice data are

10   stored in a clearinghouse database 175.

[0065]   In the embodiment shown in FIG. 4, a plurality of content providers are in

communication with the clearinghouse 100. As noted above, the content providers

shown are a cable television network 115 and an advertiser 120. Both content

providers 115,120 may communicate with the clearinghouse 100 over the Internet.

15   The cable television network 115 includes a television network terminal 145 and a

television network processor 150. In some embodiments, the terminal and processor

may be the same piece of equipment.

[0066]   The cable television network 115 or the advertiser 120 may be interested in

specific subscriber content-choice data for any number of reasons. For example, the

20   cable television network may be interested in knowing the number of viewers of a

particular broadcast that it had in a particular region. For example, if the cable

television network produced a new documentary about the history of a particular city, the cable television network may be interested in knowing the number of viewers and the demographics of the viewers that watched it. To obtain such information, the cable television network 115 submits a request for subscriber content-choice data

5   from its terminal 145 and processor 150 to the clearinghouse 100.

[0067]   In some embodiments, the clearinghouse 100 may provide a software program to each of the content providers which use its service that allows the content providers to submit requests for subscriber content-choice data using a standardized electronic request form. Using a standardized electronic request form enhances the

10   electronic integration between the clearinghouse 100 and the content providers.

[0068]   The clearinghouse 100 is able to sort and compile the subscriber content-choice data in its database 175 and provide it to the television network 115 in a desirable format using its processor 170. The clearinghouse processor 170 receives the request for subscriber content-choice data and may query the clearinghouse

15   database 175 to produce the selected content-choice data. The clearinghouse processor retrieves the selected subscriber content-choice data from the clearinghouse database 175. The processor 170 may then compile and assemble the selected content-choice data before providing it to the television network 115.

[0069]   In other embodiments, the processor 170 may also analyze or summarize

20   the selected content-choice data to provide content-choice data summaries to the television network 115.

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[0070] As shown in FIG. 4, the selected subscriber content-choice data may be provided to the content providers 115,120 over the Internet 165. In other embodiments, the selected data may be transferred using the public switched telephone network (PSTN), using a dedicated phone line, and using wireless. The

5   data are preferably securely provided to the content providers 115,120 using security techniques (e.g., encryption) known to those of ordinary skill in the art. The selected data may be displayed on the content provider terminals 145,155. Examples of terminals include, for example, personal computers, laptop computers, personal digital assistants, cellular telephones, and wireless communication devices.

10 **[0071]** The systems and methods of the present invention may be implemented in a number of ways using different computer equipment and operating platforms. For example, the databases may simply be a number of tables in relational databases. To simplify the process of querying the data, the databases may include online analytical processing tools, such as a multidimensional databases. The databases (e.g.,

15 clearinghouse database and subscriber content-choice databases) may be, for example, Microsoft SQL Server or Oracle Databases. The processors may be, for example, Sun or Intel-based servers, running operating systems such as Microsoft Windows or Linux.

[0072] The subscriber content-choice data may be transferred using a number of

20 transfer methods, including, for example, transfer over the Internet, transfer over the PSTN, transfer over a dedicated phone line, or transfer using wireless technologies. The data may be transferred in a number of formats, including, for example, in XML

files (see, e.g., FIG. 2), text files, comma separated values files (csv files), or other

common file transfer formats.

[0073] If the subscriber content-choice data are transferred in XML files, the

transfer may be executed in a number of ways. For example, if the subscriber

content-choice database is a Microsoft SQL Server database, the database can provide

the data to the processor in XML format. In other embodiments, the database may

deliver the data to the subscriber content-choice processor, and the processor puts the

data in an XML file. In other embodiments, the clearinghouse processor may collect

the data from the subscriber content-choice processor and store them directly in the

clearinghouse database.

[0074] The operator of the clearinghouse may specify to the cable system

operators the format for the subscriber content-choice data to be collected. By

insuring consistency among the cable system operators in the manner in which they

provide the subscriber content-choice data, the clearinghouse may improve its

efficiency in operating its database.

[0075] An embodiment of the present invention also relates to a computer-

readable medium, having computer-readable instructions for collecting subscriber

content-choice data from a plurality of subscriber content-choice databases and for

storing the subscriber content-choice data in a clearinghouse database. The computer

readable medium may also comprise computer-readable instructions for sorting the

collected subscriber content-choice data.

[0076]   In another embodiment, a computer-readable medium of the present

invention includes computer-readable instructions for storing the subscriber content-

choice data in a clearinghouse database, selecting stored subscriber content-choice

data, and providing the selected subscriber content-choice data to a requesting party.

5   The computer-readable medium may further comprise instructions for retrieving the

selected subscriber content-choice data from the clearinghouse database and for

securely providing the selected subscriber content-choice data to the requesting party.

[0077]   A computer-readable medium includes an electronic, optical, magnetic, or

other storage or transmission device capable of providing a processor, such as the

10   processor in a web server, with computer-readable instructions. Examples of such

media include, but are not limited to, a floppy disk, CD-ROM, magnetic disk,

memory chip, or any other medium from which a computer processor can read. Also,

various other forms of computer-readable media may transmit or carry instructions to

a computer, including a router, private or public network, or other transmission device

15   or channel.

[0078]   Various embodiments of the invention have been described in fulfillment

of the various objects of the invention. It should be recognized that these

embodiments are merely illustrative of the principles of the present invention.

Numerous modifications and adaptations thereof will be readily apparent to those

20   skilled in the art without departing from the spirit and scope of the present invention.

[0079]   That which is claimed: